

Paper for DD/S&T: for DCI

Subject: The tone of things to come in the photographuc etc,
reconnaissance field in th4 next 15 years;

General Outline and subjects to be covered:

OX CART, TAGBOARD, SUBSONIC DRONES, TACTICAL SYSTEMS;
ISINGLASS, BALLOONS, ☐ MISCELLANEOUS; TV, ☐ NEW
FILMS, DATA HANDLING, COMMO SATELLITE USAGE,

Sequence of events, what is needed, dollars vs time for various
items; levels of effort, intermediate development spots, logical progression
oof ideas and developments, etc.

NRO review(s) completed.

24 May 1965

DRAFT

Development Goals for the 1970 - 1980 Era

1. The general goal for the 1970 - 1980 era is to shorten significantly the time ~~nk~~ between request for information and receipt of the required intelligence. This goal has, in fact, ~~bx~~many aspects requiring development:

- a) Shortening of the time from request to acquisition of raw data
- b) Shortening of time from acquisition of raw data to analysis
- c) Ensuring that adequate presentation of analysis can be made
- d) Ensuring reasonable reliability of obtaining the desired intelligence.
 - 1) System reliability
 - 2) System invulnerability
 - politically
 - militarily

These developments can be reflected in hardware developments in several areas:

- a) Photographic platforms
 - Aircraft
 - Satellites
 - Balloons
- b) Photographic sensors

Spectral range

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spectral resolution

angular resolution

area covered

c) Data recording and transmitting

improved photographic films

non-silver halide films

digital recording

analog and digital data transmission (electrical/radio)

d) Data Analysis

Image integration

File retrieval, for comparison purposes

Search and acquisition of particular detail

Image analysis by automatic means

change detection

~~xxxxxx~~ spectral (spacial) analysis

Economic, etc., analysis to determine economic capability
for warfare, etc.

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Quick Reaction Over-flight Vehicles:

1. Current Inventory: The current inventory of over-flight vehicles available for "quick reaction" coverage of various areas include the IDEALIST, OXCART, and various USAF drone systems. IDEALIST: The U-2 has, now, only very limited usefulness; and may well be considered obsolete. It is vulnerable to existing Soviet defenses, including the SA-2 and possibly also the M-IG-21. In addition to the Soviet Union, these weapons are coming in to the inventory of various other countries, both within the normal Soviet bloc as well as in various other Soviet supported military establishments.

OXCART: The A-12 has not been operationally deployed at this time. It is known, however, that some of the developing Soviet defenses have capability against this vehicle. On this basis, one may well consider that the OXCART system is already close to an obsolescence condition. Its usefulness for Soviet overflight will be very limited; the development of suitable defenses in China may not be too far behind.

Drones: The current experience with drones in the China and Viet-Nam exercises is such that we cannot consider them very satisfactory, nor sufficiently invulnerable for normal overflight missions.

TAGBOARD: The TAGBOARD development is proceeding. It is expected that this vehicle will have

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m) Vehicles

- i) Supersonic (OXCAR)
- ii) Hypersonic, gliders (ISINGLASS)
- iii) Hypersonic powered flight (ISINGLASS II)
- iv) Multipass and continuous satellites ()
MULT R/U
- v) Single pass satellites (incl sub-orbital) 25X1
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- vi) Subsonic (including balloons, etc)

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n) Modes of operations

- i) "normal" surveillance
- ii) crisis conditions, strategic
- iii) crisis conditions, tactical
- iv) war-time operations, limited war
- v) war-time operations, total war.

- a. vulnerability
 - i. Radar visibility
 - ii. lasers
 - iii. weapons
 - nuclear
 - laser, etc.
 - conventional

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PLATFORMS

Now: (available or in late development stages)

U-2: subsonic, high altitude aircraft, 1 foot photo platform

OXCART: Mach 3, high altitude aircraft, 1 foot phot platform

SR-71: Increased payload, extended performance advanced
version of OXCART; both O&71 require adv. elec. co. m.

TAGBOARD: Mach 4 drone, under development

CORONA: Low resolution satellite system. about 14 day reaction



Drones: Subsonic, high altitude drones in AF inventory,
fairly high vulnerability

~~RB 57F: High altitude, subsonic large payload, peripheral flight
system~~

~~RB 47 (generally elint)~~

Miscellaneous USAF reconnaissance aircraft, subsonic
and limited supersonic

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Development areas

Propulsion:

High specific rockets
high pressure
exotic fuels
Air breathing engines
supersonic combustion ramjet
air collection schemes
Nuclear aircraft engines

Satellites

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[Redacted]

Low altitude capability

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[Redacted]

Mobile launch

Data retrieval improvement

Maneuvering recovery

Multiple recoveries

Video readout

From storage on board

Real time, direct, or via relay satellite

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[Redacted]

Sensors

Photographic

Spectral separations

High density storage

faster films

higher resolution films

exotic materials

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[Redacted]

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2. Lower vulnerability to active defenses.

a.) Boost glide vehicles

b.) Hypersonic aircraft.

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[REDACTED]

d) [REDACTED]

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e) [REDACTED]

f.) [REDACTED]

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Miscellaneous notes used in preparation
of long range forecasting 4 copies

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